

## What is Claimed is:

- [c1] A light emitting diode bar system comprising:
- an array of light emitting diodes on a substrate;
  - a control unit including or coupled to a data formatting unit and a clock circuit for generating a clock output signal;
  - and a spread spectrum clock generator for generating a clock output signal with reduced amplitude electromagnetic interference spectral components.
- [c2] The light emitting diode bar system according to claim 1, wherein the clock circuit is coupled to:
- an oscillator for generating a reference frequency signal; and
  - the spread spectrum clock generator coupled to the oscillator to generate a spread spectrum output signal having a fundamental frequency and reduced amplitude EMI spectral components at harmonics of the fundamental frequency.
- [c3] The light emitting diode bar system according to claim 1, wherein the spread spectrum clock generator comprises:
- a clock pulse generator; and
  - a spread spectrum modulator.
- [c4] The light emitting diode bar system according to claim 3, wherein the spread spectrum modulator is a frequency modulator.
- [c5] The light emitting diode bar system according to claim 4, wherein the frequency modulator is a profile modulator for modulating the clock pulse generator with a periodic waveform.
- [c6] The light emitting diode bar system according to claim 3, wherein the spread spectrum modulator varies up and down at an asynchronous rate to a clock strobe pulse.
- [c7] The light emitting diode bar system according to claim 1, wherein the system includes at least two arrays of light emitting diodes.

- [c8]        The light emitting diode bar system according to claim 1, wherein the array of light emitting diodes includes or is coupled to the spread spectrum clock generator.
  
- [c9]        An image forming device including the light emitting diode bar system of claim 1, and further having a photoreceptor on which a latent image is formed by the light emitting diode array.
  
- [c10]      The image forming device according to claim 9, wherein the clock circuit comprises:
  - an oscillator for generating a reference frequency signal; and
  - a spread spectrum clock generator coupled to the oscillator to generate a spread spectrum output signal having a fundamental frequency and reduced amplitude EMI spectral components at harmonics of the fundamental frequency.
  
- [c11]      The image forming device according to claim 10, wherein the spread spectrum clock generator comprises:
  - a clock pulse generator; and
  - a spread spectrum modulator.
  
- [c12]      The image forming device according to claim 11, wherein the spread spectrum modulator is a frequency modulator.
  
- [c13]      The image forming device according to claim 12, wherein the frequency modulator is a profile modulator for modulating the clock pulse generator with a periodic waveform.
  
- [c14]      The image forming device according to claim 12, wherein the spread spectrum modulator varies up and down at an asynchronous rate to a clock strobe pulse.
  
- [c15]      A method of reducing electromagnetic interference emissions from a light emitting diode bar system of an image forming device, wherein the light emitting diode bar system comprises
  - an array of light emitting diodes on a substrate; and
  - a control unit including or coupled to a data formatting unit and a clock

circuit for generating a clock output signal with reduced amplitude electromagnetic interference spectral components, the method comprising modulating a frequency of the clock circuit to spread electromagnetic emissions over a range of frequencies.

- [c16] The method of reducing electromagnetic interference emissions from a light emitting diode bar system of an image forming device according to claim 15, wherein the frequency is modulated using a periodic waveform.
- [c17] The method of reducing electromagnetic interference emissions from a light emitting diode bar system of an image forming device according to claim 15, wherein the frequency is modulated up and down at an asynchronous rate.

09683537.0160